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EXAMINER
RUTTEN, JAMES D

ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/916,112	LEE ET AL.	
	Examiner	Art Unit	
	J. Derek Rutten	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgement is made of Applicant's amendment dated 26 January 2005, responding to the 26 August 2004 Office action provided in the rejection of claims 1-20, wherein claims 9, 12, 14, and 19 have been amended, and no claims have been canceled or added. Claims 1-20 remain pending in the application and have been fully considered by the examiner.

2. Applicant has primarily argued that the claims are not anticipated by the combination of Glebov and Benage because it does not disclose generating an installation program from a meta document. This argument is not persuasive, as will be addressed under the *Response to Arguments* section below.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

4. At the bottom of page 10 through the top of page 11 of the response, applicant argues that Benage fails to discuss the use of metadata or a meta document in its installation process. However, Glebov discloses generating a program from a meta document in column 5 lines 1-4 as cited in the Office Action. Benage simply teaches the generation of an installation program based on various design files created by the developer. As such, Benage is not necessary to teach the generation of an installation program from a meta document since Glebov already teaches generation of a program from a meta document.

5. Near the bottom of page 11, applicant argues that Glebov teaches away from applicant's invention since Glebov does not discuss an installation process. However, neither does Glebov advise against an installation process, automated or manual. Thus, this argument is not convincing.

6. Near the top of page 12, applicant argues that Benage does not teach installing at least a part of said software application. However, further review of Benage reveals a teaching of installation. See page 490, 2nd paragraph: "The next time the URL address of the application is specified by some browser out in the ether, the application will be installed at the client computer; that is, the browser drives the installation." Thus, this argument is not convincing.

7. At the bottom of page 13 through the top of page 14, applicant argues that Glebov does not disclose creating procedure code. However, the cited portion of Glebov includes the phrase "implement the objects". This is interpreted as the creation of procedure code. Implementation of objects requires the creation of procedure code to function.

8. At the bottom of page 14 through the middle of page 15, applicant argues that Glebov does not teach "configuring a target database". However, the target database must inherently be configured since it is used to store data. If it were not first configured, it would no be able to store data. Applicant further suggests that Glebov's common repository as cited in the related passage from the Office action is not comparable to the "target database" as recited in claim 9. However, it is not clear from the language of the claim or from the cited passage why they would not be compatible.

9. At the bottom of page 16 through the top of page 17, applicant appears to argue that the Campbell reference is nonanalogous art. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Glebov and Benage are concerned with distributed computing which comprises communication between a terminal and a host server (Glebov column 5 lines 13-17). As pointed out by the applicant, Campbell is directed to "a new and improved key management system particularly suited to facilitate communication between point of sale terminals and a host processor." Campbell can be considered analogous art since it teaches the facilitation of communication between a terminal and a host.

10. In the second paragraph on page 17, applicant argues that there is no mention in Campbell of "installing application code that will create the key generation table." However, as pointed out above, Benage teaches the installation of application code. Campbell further teaches creation of the key generation table. Thus, while it is agreed that none of the cited prior art

references teaches "installing application code that will create the key generation table," this feature would have been obvious.

11. At the bottom of page 18 through the top of page 19, applicant argues that Gregor does not teach a "computer-generated software application including a presentation tier, business tier, and data tier." However, page 33 of Gregor teaches these limitations as cited in the previous Office Action on page 14. Thus, this argument is not convincing.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Claim 9 recites the limitation "said generated software application" in line 5. There is insufficient antecedent basis for this limitation in the claim. An installation program is generated, and at least part of said software application is installed, but there is no recitation of actually generating said software application. For the purpose of further examination, this limitation will be interpreted as --said ~~generated~~ software application--.

15. Claims 10-13 are rejected as being dependent upon a rejected base claim.

16. Claim 12 further suffers from insufficient antecedent basis in lines 2-3, similar to claim 9 as discussed above.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 1-8, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,343,265 to Glebov et al. (hereinafter "Glebov") in view of "Building Enterprise Solutions with Visual Studio 6" by Benage et al. (hereinafter "Benage").

As per claim 1, Glebov discloses:

A method (column 9 line 49 – column 10 line 36) *for automatically generating a software application on a first computer, comprising:*

defining a system design (column 4 lines 21-24: "Developers use the OO modeling tools to identify and **define the application** requirements and functionality for the application program.");

creating a design database file associated with said system design (column 4 lines 50-51: "The OO modeling tool 36 **produces a design model** 38, which may conform to the UML specification.");

converting said design database file to a meta document (column 4 lines 51-54: "A mapping system 40 **maps the data** in the design model 38, which provides the initial definition of the objects, **to**

metadata 42 that is then retained in a common repository 44.");

generating a program from said meta document (column 5 lines 1-4: "The developer may use an application development tool 46 to modify and manipulate the metadata 42 in the common repository 44 to develop and **implement the objects** defined therein to complete the design process.");

Glebov does not expressly disclose: *generating an installation program from said meta document; and installing at least part of said software application by executing said installation program.*

However, in an analogous environment, Benage teaches a software development tool that generates an installation program that installs at least part of a software application when executed (page 490 "Stepping Through the Package and Deployment Wizard": "In this section, you will step through the process of **creating an Internet package, installing the application**, and viewing the application in a container.").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Benage's teaching of installation program generation in Glebov's program generating method. One of ordinary skill would have been motivated to generate an installation program for a generated program for installing program files in order to be able to use it on a computer.

As per claim 2, the above rejection of claim 1 is incorporated. Glebov further discloses: *transmitting said installation program from said first computer to a second computer* (column 8 lines 30-31).

As per claim 3, the above rejection of claim 1 is incorporated. Glebov does not expressly disclose *creating a setup package to automate at least part of an installation and a customization of said software application.*

However, Benage teaches use of a setup package generated by a "Package Wizard" to aid in the installation of an application (page 494). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Benage's package wizard in Glebov's method of software development. One of ordinary skill would have been motivated to simplify the complicated process of software installation by developing an automated installation package.

As per claim 4, the above rejection of claim 1 is incorporated. Glebov does not expressly disclose: *creating one or more files to allow said software application to be installed on a second computer.*

However, Benage teaches the generation of files for installation of software on a second computer (page 494). It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate Glebov's files with Benage's software development method. One of ordinary skill would have been motivated to generate files

so that an application represented by those files could be transferred to a second computer.

As per claim 5, the above rejection of claim 1 is incorporated. Glebov does not expressly disclose *configuring and customizing said software application.*

However, Benage teaches configuration and customization of a software application (pages 490-494). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Benage's customization and configuration with Glebov's generated objects. One of ordinary skill would have been motivated to customize and configure an application for various computing environments which would allow an application to run on numerous platforms and/or networks.

As per claim 6, the above rejection of claim 1 is incorporated. Glebov further discloses: *defining a first entity and at least one attribute associated with said first entity* (column 3 lines 5-8).

As per claim 7, the above rejection of claim 6 is incorporated. Glebov further discloses: *defining a second entity; and defining a relationship between said first and second entities* (column 3 lines 3-5 and 8-11).

As per claim 8, the above rejection of claim 6 is incorporated. Glebov further discloses *defining a second entity* (column 3 lines 8-11)*; and defining a predefined search associated with at least one of said first and second entities* (column 14-17).

As per claim 19, Glebov discloses:

A method (column 9 line 49 – column 10 line 36 as cited in the rejection of claim 1);

receiving system design (column 4 lines 21-24 as cited in the rejection of claim 1), *wherein said system design defines at least one entity* (column 3 lines 5-8 as cited in claim 6)*;*

establishing database connections (column 4 lines 50-54 as cited in the rejection of claim 16)*;*

creating procedure code (column 5 lines 1-4 as cited in the rejection of claim 1)*;*

creating controller classes, said controller classes providing logic for said at least one entity (column 4 lines 31-33: "The developer designs objects and classes in an attempt to define real world problem spaces as program objects." The entities defined in the system design get further defined as classes which when implemented inherently provide control logic for the entity.)*;*

creating object business code for said at least one entity (column 4 lines 62-64: "The common repository 44 can **generate** XML, IDL or other file formats such as Java files by reading the metadata.")*;*

Grabov does not expressly disclose generating directories, web browser files, security logic, or project files.

However, Benage teaches:

generating destination directories (page 491 Figure 16.9 – These directories are generated during installation.)*; generating virtual directories* (vb page 492: "`specify whether parts of your distributed application will be located at a Microsoft Web site.`");

creating at least one web browser template file (page 490: "`The next time the URL address of the application is specified by some browser out in the ether, the application will be installed at the client computer...`" In order for the application to be accessible, a browser template file must inherently be available to provide access.)*;*

generating security logic (page 493: "`The Safety Setting dialog enables you to personally indicate project components you decide are safe for the user environment.`" The security of the system could be compromised by running unsafe code.)*; and*

generating a project file (page 494: "`The **package** will be built in short order.`") *to connect the destination directories, virtual directories, database connections, procedure code, controller classes, object business code, web browser template file, and security logic, to automatically generate the software application* (See page 494: "`Included in the package (other than application files) are several files to manage the installation and`

execution of the application."). Thus, Benage further teaches the assembly of multiple elements related to the generation of a software application including directories, files, and security logic, into a project that automatically generates the software application when invoked. See further on page 494: "The HTML page loads and the installation of the application begins."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Benage's installation techniques with Grebov's application generation. One of ordinary skill would have been motivated to install a generated application using a directory structure to organize application files, a browser template for permitting broad access to an application, security logic to make execution of the application safe by preventing damage to a system, and a project file for easy distribution of these elements in an application.

As per claim 20, the above rejection of claim 19 is incorporated. Glebov further discloses: *receiving an extensible markup language file associated with said system design* (column 4 lines 62-64 as cited in the rejection of claim 17).

19. Claims 9, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Glebov and Benage as applied to claim 1 above, and further in view of "IBM Component Broker on System/390" by Gregor et al. (hereinafter "Gregor").

As per claim 9, the above rejection of claim 1 is incorporated. Glebov further discloses: *configuring a target database* (Fig. 3 element 44). Glebov does not expressly disclose *a database server and establishing communication between said target database server and said software application.*

However, in an analogous environment, Gregor teaches facilities for setting up communication between an application and a target database server (page 23, Figure 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Gregor's database communication with Glebov's generated objects. One of ordinary skill would have been motivated to provide ubiquitous Internet-based client access to generated software using a database server.

As per claim 12, the above rejection of claim 9 is incorporated. Glebov does not expressly disclose: *providing a web server access to said software application.*

However, Benage teaches that web servers can be given access to software applications (page 492 last paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Benage's web server in Glebov's generated objects. One of ordinary skill would have been motivated to provide simple world wide access to software using a commonly available web server.

As per claim 13, the above rejection of claim 9 is incorporated. Glebov does not expressly disclose: *placing at least one hook in at least one web page and installing application code to process said at least one hook.*

However, in an analogous environment, Gregor teaches the placement of a hook in a web page along with application code to process the hook (page 20 last paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Gregor's web page hook in Glebov's server. One of ordinary skill would have been motivated to initiate execution of an application residing on a server in order to stratify execution control.

20. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Glebov and Benage as applied to claim 9 above, and further in view of "Computer User's Dictionary" by Microsoft Press (hereinafter "Microsoft Dictionary").

As per claim 10, the above rejection of claim 9 is incorporated. Glebov does not expressly disclose: *installing reports server software on an application server.*

However, Benage teaches an application server (page 494 last paragraph: "It acquires, when possible, the needed files..."). Also, in an analogous environment, the Microsoft Dictionary teaches that a report generator application can be used as part of database management (page 298 "report generator"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Microsoft Dictionary's teaching of report generators with Benage's application server in Glebov's development method. One of ordinary skill would have been motivated to allow user's to view formatted information contained in a database.

21. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Glebov and Benage as applied to claim 9 above, and further in view of U.S. Patent 4,605,820 to Campbell, Jr. (hereinafter "Campbell").

As per claim 11, the above rejection of claim 9 is incorporated. Glebov does not expressly disclose: *installing application code to create and update a key generation table.*

However, in an analogous environment, Campbell teaches the use of a key generation table (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Campbell's key generation table with Glebov's database. One of ordinary skill would have been motivated to enhance security and reduce key storage space.

22. Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glebov in view of Gregor.

As per claim 14, Glebov discloses:

A system (Fig. 3) *for developing a computer-generated software application, comprising:*

a designer computer (Fig. 3 element 30);

a design application residing on said designer computer (Fig. 3 element 36), *said design application configured to receive a system design and create a design database file* (column 4 lines 50-51 as cited in the rejection of claim 1);

a generator application in communication with said design application, configured to receive said design database file and generate said computer-generated software application (column 5 lines 1-4 as cited in the rejection of claim 1),

Glebov does not expressly disclose: *wherein said computer-generated software application includes a presentation tier, a business tier and a data tier.*

However, in an analogous environment, Gregor teaches (page 33) that distributed computing can be modeled in terms of a presentation tier ("first tier), a business tier ("middle tier), and a data tier ("final tier"). (page 33: "The **first tier** provides the application user interface and allows for user manipulation and interaction. The **middle tier** is where much of the essential business logic resides. It separates the first tier from various backend systems and resource managers. The backend constitutes the **final tier** in our diagram. This is where we might find a variety of databases, transactional monitor systems, message-oriented middleware, and enterprise resource planning applications.")

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Gregor's teaching of tiers in Glebov's design system. One of

ordinary skill would have been motivated to separate the logical components of a distributed system to allow for greater abstraction and improved security.

As per claim 15, the above rejection of claim 14 is incorporated. All further limitations have been addressed in the above rejection of claim 6.

As per claim 16, the above rejection of claim 14 is incorporated. Glebov further discloses: *a design database configured to receive and store said design database file* (column 4 lines 50-54).

As per claim 17, the above rejection of claim 14 is incorporated. Glebov further discloses: *wherein said generator application is configured to convert said design database file into an extensible markup language file* (column 4 lines 62-64).

As per claim 18, the above rejection of claim 17 is incorporated. Glebov further discloses: *wherein said computer-generated application is programmed with object technology* (column 4 lines 19-21).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571) 272-3703. The examiner can normally be reached on T-F 6:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jdr

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5/31/05